

## Questions

1. Explain the difference between the == operator and the === operator.
2. Explain what a closure is. (Note that JavaScript programs use closures very often.)
3. Explain what higher order functions are.
4. Explain what a query selector is and give an example line of JavaScript that uses a query selector.

## Answers:

1. == means one value is 'equal to' another value, while === tests whether a value is **precisely** equal to the other.  
e.g. (0 == False) and ("" == false) are both true statements (because 0 and 'false' *mean* the same), but (0 === false) is a false statement', since '0' and 'false' are not exactly the same. This is useful to prevent unexpected type conversions performed by Javascript.
2. Closure means being able to reference **a specific instance** of local variables in an enclosing function. Local variables are re-created for every call, and can be referenced specifically.
3. functions that operate on other functions, either by taking them as arguments or by returning them. They allow to abstract over *actions*, not just values.
4. a query selector takes a selector string and returns an array-like object containing all the elements that it matches. It is useful if you want a specific, single element. It will return only the first matching element or null if no elements match.

Example code:

```
<p>And if you go chasing  
  <span class="animal">rabbits</span></p>  
<p>And you know you're going to fall</p>  
<p>Tell 'em a <span class="character">hookah smoking  
  <span class="animal">caterpillar</span></span></p>  
<p>Has given you the call</p>  
<script>  
  function count(selector) {  
    return document.querySelectorAll(selector).length;  
  }  
  console.log(count("p"));      // All <p> elements  
  console.log(count(".animal")); // Class animal  
  console.log(count("p .animal")); // Animal inside of <p>  
  console.log(count("p > .animal")); // Direct child of <p>  
</script>
```